

Remarks

Reconsideration of this Application is respectfully requested.

Upon entry of the foregoing amendment, claims 1-3 and 5-21 are pending in the application, with claims 1, 11, and 21 being the independent claims. Claim 4 is sought to be cancelled without prejudice to or disclaimer of the subject matter therein. New claim 21 is sought to be added. These changes are believed to introduce no new matter, and their entry is respectfully requested.

Based on the above amendment and the following remarks, Applicant respectfully requests that the Examiner reconsider all outstanding objections and rejections and that they be withdrawn.

Allowable Subject Matter

Applicant acknowledges with appreciation the Examiner's indication that claim 4 would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims. Accordingly, Applicant has added new independent claim 21 including the subject matter of prior dependent claim 4 and its base claims 1 and 18.

Rejections under 35 U.S.C. § 103

Barton, Smith, Hasegawa, and Tanabe

Claims 1-3, 5, 10-12, 14, and 17 have been rejected under 35 U.S.C. § 103 as being allegedly unpatentable over Barton et al. (US 6,654,431), in view of Smith (US

5,365,470), Hasegawa (US 6,735,244), and Tanabe (US 6,714,529). Applicant respectfully traverses this rejection.

The combination of Barton, Smith, Hasegawa, and Tanabe does not teach or suggest each and every feature of independent claims 1 and 11. Specifically, the combination of Barton, Smith, Hasegawa, and Tanabe does not teach or suggest, at least the feature of, "a plurality of demodulators, wherein: each of the plurality of demodulators is configured to demodulate a data signal having a different one of the plurality of frequency bands of the multi-tone, multi-band signal, and is configured to utilize a different sampling rate," as recited in independent claim 1 or a method including at least the step of "demodulating, in parallel each of the plurality of equalized data signals in a separate demodulator using a discrete Fourier transform, wherein each demodulator utilizes a different sampling rate and wherein at least two demodulators use different size discrete Fourier transforms," as recited in independent claim 11.

The Office Action acknowledges that Barton does not teach "(a) each of the plurality of demodulators is configured to utilize a different sampling rate, and at least two of the plurality of demodulator have different discrete Fourier transform sizes." (Office Action, p. 4) However, the Office Action alleges that Smith provides the missing teaching. Applicant respectfully disagrees.

The serial pipelines Smith presents in FIGs. 1-4 allow for parallel processing of different FFT sizes. (Smith, FIGs. 1-4). However, Smith does not teach or suggest that the FFTs process data at different sampling rates. (Smith, col. 7, line 22-col. 8, line 8). To the contrary, if different sampling rates were allowed in the Smith serial pipeline, the FFTs would produce aliased frequencies. This would result in inaccurate output data.

Accordingly, neither Barton nor Smith teach or suggest "a plurality of demodulators, wherein: each of the plurality of demodulators is configured to demodulate a data signal having a different one of the plurality of frequency bands of the multi-tone, multi-band signal, and is configured to utilize a different sampling rate," as recited in independent claim 1 or a method including at least the step of "demodulating, in parallel each of the plurality of equalized data signals in a separate demodulator using a discrete Fourier transform, wherein each demodulator utilizes a different sampling rate and wherein at least two demodulators use different size discrete Fourier transforms," as recited in independent claim 11.

Neither Hasegawa nor Tanabe overcome the deficiencies of Barton and Smith relative to independent claims 1 and 11. For at least these reasons, independent claims 1 and 11 are patentable over the combination of Barton, Smith, Hasegawa, and Tanabe. Claims 2, 3, 5, and 10 depend from claim 1 and claims 12, 14, and 17 depend from claim 11. For at least the above reasons, and further in view of their own features, dependent claims 2, 3, 5, 10, 12, 14, and 17 are patentable over Barton, Smith, Hasegawa, and Tanabe. Reconsideration and withdrawal of the rejection are therefore respectfully requested.

Barton, Smith, Hasegawa, Tanabe and Allpress, Ho, Agee, Liu or Kahre

Claim 13 has been rejected under 35 U.S.C. § 103 as being unpatentable over Barton et al., U.S. Patent No. 6,654,431 (Barton), in view of Smith, U.S. Patent No. 5,365,470 (Smith), Hasegawa, U.S. Patent No. 6,735,244 (Hasegawa), Tanabe, U.S. Patent No. 6,714,529 (Tanabe), and Allpress et al., U.S. 6,496,546 (Allpress). Claims 6-

8 and 15 have been rejected under 35 U.S.C. § 103 as being unpatentable over Barton, in view of Smith, Hasegawa, Tanabe, and Ho et al., U.S. Patent No. 5,317,596 (Ho).

Claims 9 and 16 have been rejected under 35 U.S.C. § 103 as being unpatentable over Barton, in view of Smith, Hasegawa, Tanabe, and Agee, U.S. Patent No. 6,128,276 (Agee). Claim 18 has been rejected under 35 U.S.C. § 103 as being unpatentable over Barton, in view of Smith, Hasegawa, Tanabe, and Liu et al., U.S. Patent No. 6,442,195(Liu). Claims 19 and 20 have been rejected under 35 U.S.C. § 103 as being unpatentable over Barton, in view of Smith, Hasegawa, Tanabe, and Kahre, U.S. Patent No. 5,680,388 (Kahre). Applicant respectfully traverses these rejections.

Claims 6-9 and 18-20 depend from claim 1 and claims 13, 15, and 16 depend from claim 11. None of Allpress, Ho, Agee, Liu or Kahre overcome the deficiencies of Barton, Smith, Hasegawa, and Tanabe, relative to independent claims 1 and 11 discussed above. For at least these reasons, and further in view of their own features, claims 6-9, 13, 15, 16, and 18-20 are patentable over the combination of Barton, Smith, Hasegawa, Tanable and Allpress, Ho, Agee, Liu, or Kahre. Reconsideration and withdrawal of the rejection are therefore respectfully requested.

Conclusion

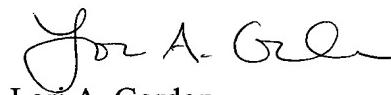
All of the stated grounds of objection and rejection have been properly traversed, accommodated, or rendered moot. Applicant therefore respectfully requests that the Examiner reconsider all presently outstanding objections and rejections and that they be withdrawn. Applicant believes that a full and complete reply has been made to the outstanding Office Action and, as such, the present application is in condition for

allowance. If the Examiner believes, for any reason, that personal communication will expedite prosecution of this application, the Examiner is invited to telephone the undersigned at the number provided.

Prompt and favorable consideration of this Amendment and Reply is respectfully requested.

Respectfully submitted,

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